

Work Order ID 143511

Tuesday, March 15, 2016 10:54:40 AM

143511

Page 1

Item ID: D3582-1-BENT Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Skidtube Assembly BK117 Stop ***NS2***
 Item Name: 8
 Start Date: 3/17/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 4/1/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: mf Date: 16-3-15 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3582	C

110 0.03
110 BENDING MACHINE - SKIDTUBES
 CNC Bend 1 Memo 0.00
 CNC Delta 100 Bender Bend tube as per program D3582 on CNC Bender and Dwg D3582. Folio 3,
 use bending aid DT9632
 2- cut fwd end of tube as per dwg

120 0.00
120 QC5- Inspect part completeness to step on W/O
 QC Memo 0.00
 Quality Control

130 0.00
130 Identify as per dwg & Stock Location LG002
 Packaging Packaging 0.00
 Packaging Memo 0.00
 Packaging LOCATION : LG002

16-3-17
8
PTC
18
9-09
8 8 16-03-18

3E
8 8 16-03-18

DQA:

Date: 16.04.14



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 16/03/21

Work Order update only ☐

Work Order: <u>D3582-1-BENT</u>		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. <u>143511</u>		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. <u>16-5667</u>		Scrap ☒		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☒	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date: <u>16-3-16</u>		Step #: <u>110</u>		QTY Effective: <u>1</u>			MRB (QSI042) Approval		
							DAS 9 9-89 16-03-16		
Description Work Order Deviation				Disposition					
while pulling stock Found QTY 1 D2962-150 B# 90871 with logedent. RC; Material Handling				Scrap & Destroy				Completed By <u>16-3-16</u>	
								Lead hand / Supervisor Approval Verification <u>16-3-16</u>	
								QC / QA Coordinator Approval DAS 9 9-89 16-03-16	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☒	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☒	Marks/Chatter ☒	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER: ☐							

Work Order ID 143511

Tuesday, March 15, 2016 10:54:40 AM

143511

Page 2

Item ID: D3582-1-BENT Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube Assembly BK117
Start Date: 3/17/2016 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 4/1/2016 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.01							
Quality Control									

MLJ MAR 18 2016

MLJ MAR 18 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Picklist Print

Tuesday, March 15, 2016 10:54:40 AM

Page 1

Work Order ID: 143511

143511

Parent Item: D3582-1-BENT

D3582-1-BFNT

Parent Item Name: Skidtube Assembly BK117

Start Date: 3/17/2016

Required Date: 4/1/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 14.01.17 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D2962-150

Manufactured No

Each 64.0000

D2962-150

3.540 Outer Tube, Extrud

**

4
DP 16-3-16

Location

Loc Qty

Loc Code

HALL

64

132753

59

90871

5

4
5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

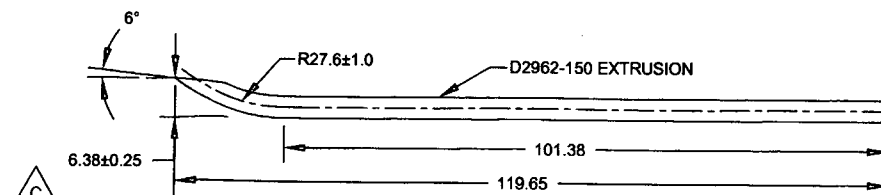
Root Cause		FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐					
Misidentified ☐	Past Due ☐						

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

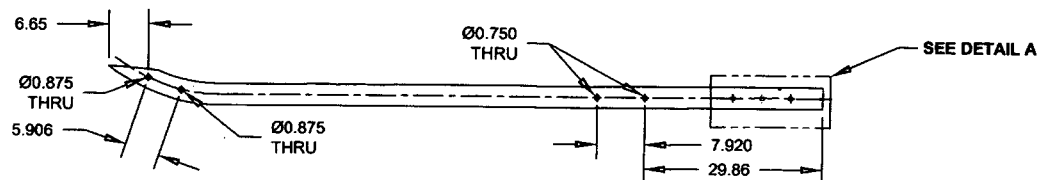
Qty	Part Number	Description
X	D3582-041	SKIDTUBE ASSEMBLY
1	D2962-150	EXTRUSION
1	D2964	CAP
1	D2965	CAP
1	D2971	CROSS BOLT SPACER
2	D2973	CROSS BOLT SPACER
1	D3508-3	WEARPLATE
1	D3508-9	WEARPLATE
1	D3508-11	WEARPLATE
1	D3508-13	WEARPLATE
1	D3558-3	GASKET
1	D3558-9	GASKET
1	D3558-11	GASKET
1	D3558-13	GASKET
1	D3584-1	WEB
3	D3662-1	CROSS BOLT SPACER
1	D3662-3	CROSS BOLT SPACER
36	AELS-1032-130	INSERT
2	AL57-428-165	INSERT
28	AN3C4A	BOLT
2	AN3-5A	BOLT
2	AN4-4A	BOLT
28	NAS1149C0332R	WASHER (AN960C10L)
2	NAS1149D0332J	WASHER (AN960JD10L)
2	NAS1149D0416J	WASHER (AN960JD416L)

NOTES:

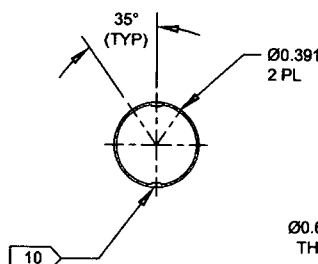
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 17.5 lbs
- 8) WELDING: PER DART QSI 004.
- 9) INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 10) USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS.



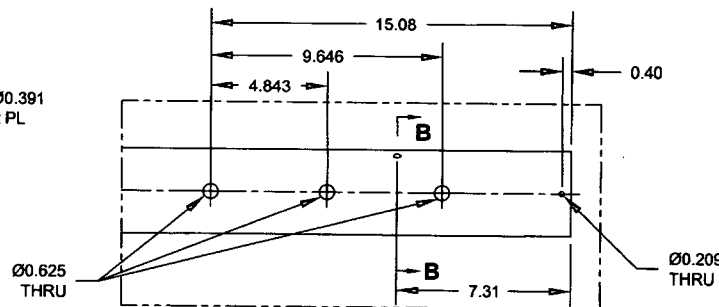
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 5X



DETAIL A
SCALE 5X

C	D3492 PLUG ASSEMBLIES REMOVED. REFORMAT NOTES SHT 1	AP	15.11.02
B	29.86 WAS 29.87 (ZN C2-1), INCORPORATED DEO D3582-A-1 (ZN D5-1), FORMAT TO CURRENT STD	RF	15.02.20
A	NEW ISSUE	PH	07.08.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC EUGENE, OR	
DRAWN	AP		
CHECKED	DR	DRAWING NO.	REV. C
MFG. APPR.	BA	D3582	1 OF 3
APPROVED	BA	TITLE	SCALE
DE APPR.	#	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	15.11.02	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED
2016-02-04
EN16-514

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
				Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
				Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
				Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
				Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
				Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
				Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
				Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
				OTHER : ☐			

DQA: _____ Date: _____



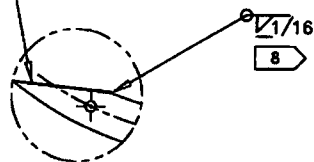
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

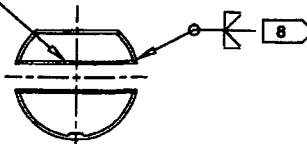
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

D2984 CAP
(GRIND FLUSH)



DETAIL C

D2971 SPACER



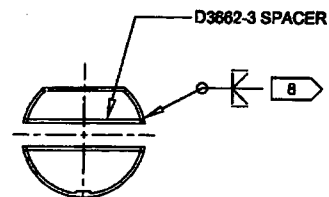
SECTION D-D

SCALE 3X

SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER



SECTION E-E

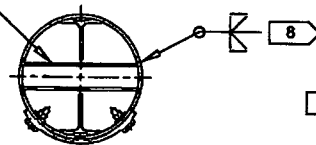
SCALE 3X

SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER

D2973 SPACER
2 PL



SECTION F-F

SCALE 3X

SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER (2 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.625 DRILL TO REMOVE SPILL OVER

10 AFTER FINISH, INSTALL
AELS-1032-130
INSERT 36 PL

AN3C4A BOLT (1)
NAS1149C0332R WASHER (1)
28 PL

D3584-1 WEB
REF

D3662-1 SPACER
3 PL

SECTION G-G

SCALE 3X

SECTION G-G NOTES

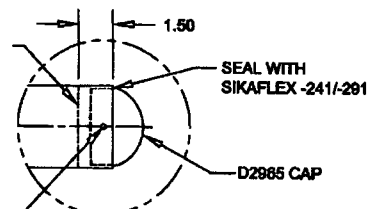
AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER

AFTER FINISH, INSTALL
ALS7-428-165 INSERT (1)
AN4-4A BOLT (1)
NAS1149D0416J WASHER (1)
2 PL

D3584-1 WEB
REF

AN3-6A BOLT (1)
NAS1149D0332J WASHER (1)
2 PL



DETAIL H

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	RF	EUGENE, OR	
CHECKED	ASS	DRAWING NO.	REV. C
MFG. APPR.	MA	D3582	3 OF 3
APPROVED	PL	TITLE	SCALE
DE APPR.	MA	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	15.11.02	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC THIS DOCUMENT IS UNCLASSIFIED AND IS AVAILABLE ON THE OPEN SOURCE CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED
2016-02-04

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							